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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,769

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Sumie Nakabayashi

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MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.
1800 DIAGONAL ROAD
SUITE 370
ALEXANDRIA, VA 22314

EXAMINER

PHU, PHUONG M

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646.769

Applicant(s)	
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NAKABAYASHI, SUMIE

Examiner

Phuong Phu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11 and 13-18 is/are rejected.
- 7) ☒ Claim(s) 2-6,10 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/25/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 7 and 8 are objected to because of the following informalities:

-In claim 1, “the modulator” and “the radio section” are lack of antecedent basis.

-In claim 7, “said information transmission rate”, “said radio section” and “the information” are lack of antecedent basis.

-In claim 8, “the information transmission rate” and “said radio section” are lack of antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 7, 8, 11, 13-15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Walton et al (7,020,110).

-Regarding to claim 1, see figures 8A and 9 and col. 41, line 16 to col. 42, line 26, col. 43, line 16 to col. 45, line 13), Walton et al discloses (see figure 8 A) a control system, (hereby considered equivalent with the limitation “quality of service (QoS) control system”, and called so), used for a radio transmitter/receiver (104), comprising:

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a control unit (814x) (see figure 9), (hereby considered equivalent with the limitation “QoS control unit”, and called so), for supplying a modulator (916) of said radio transmitter/receiver with the transmission data (Pilot Data, Info Bits) in the order taking transmission quality (CSI), (hereby considered equivalent with the limitation “QOS ”, and called so), into consideration (see col. 43, line 22 to col. 44, line 25); and

a determining unit (comprising (830, 834)) (see figure 8A) connected to said QoS control unit for determining whether a control operation, (hereby considered equivalent with the limitation “QoS control operation ”, and called so), the transmission data is required or not in accordance with the information transmission conditions, e.g., for determining whether a coding and modulation scheme needs to be adapted changed by being based on the status of the received the transmission quality (CSI) in the radio section (104), (see col. 41, lines 16-35, col. 41, line 64 to col. 42, line 27);

wherein the QoS control operation of the transmission data by said QoS control unit is performed selectively in accordance with the information transmission conditions in the radio section, (see col. 41, lines 16-35, col. 41, line 64 to col. 42, line 27).

-Regarding to claim 7, Walton et al discloses that an information transmission rate “rate” for said radio section is obtained from the information on specific bits contained in the received data (see col. 42, lines 1-9, col. 49, lines 25-45).

-Regarding to claim 8, Walton et al discloses that said QoS control unit has a plurality of QoS control modes, e.g., plurality of modulation modes QPSK, M-PSK, M-QAM etc., and wherein the QoS control mode applicable to the transmission data is switched between said

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plurality of said QoS control modes in accordance with the information transmission rate for said radio section (see col. 44, lines 12-25).

-Regarding to claim 11, as similarly applied to claims 1, 7 and 8, set forth above and herein incorporated, see figures 8A and 9 and col. 41, line 16 to col. 42, line 26, col. 43, line 16 to col. 45, line 13), Walton et al discloses a QoS control method (see figure 8A) for a radio transmitter/receiver (104), comprising:

step (830, 834) (see figure 8A) of determining whether the QoS control of the transmission data is required or not in accordance with the information transmission conditions (CSI) in the radio section;

step (814x) (see figure 9) of supplying the transmission data (Pilot Data, Info Bits) to the modulator (916) of said radio transmitter/receiver in the order taking the QoS into consideration in the case where said QoS control operation is required; and

step (908) (see figure 9) of inherently supplying the transmission data to said modulator in the order of input (Pilot Data, Info Bits) in either of the case where said QoS control operation is required or not required (see col. 43, lines 35-43).

-Regarding to claim 13, as similarly applied to claims 1, 7, 8 and 11, set forth above and herein incorporated, see figures 8A and 9 and col. 41, line 16 to col. 42, line 26, col. 43, line 16 to col. 45, line 13), Walton et al discloses a radio transmitter/receiver (104) (see figure 8A) comprising:

an adaptive modulation-type transmission unit (comprising (916)) (see figure 9) connected to an antenna (824a-824t); and

a receiving unit (840) (see figure 8A) connected to said antenna;

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wherein said adaptive modulation-type transmission unit includes:

a high frequency unit (822a-822t) (see figure 8A) connected to said antenna; a modulation unit (916) (see figure 9) connected to said high-frequency unit; a radio frame coding unit (912, 914) (see figure 9) connected to said modulation unit for converting the transmission data into a format of a modulation scheme corresponding to the propagation path conditions in the radio section; and

a QoS control unit (830, 834) (see figure 8B) for supplying, by scheduling, the transmission data to said radio frame coding unit in order taking the quality of service (QoS) into consideration.

-Regarding to claim 14, Walton et al discloses a propagation path estimation unit (830, 840) (see figure 8B) for estimating the conditions of the propagation path for the radio section from the signal received by said receiving unit.

-Regarding to claim 15, Walton et al discloses a modulation-type selecting unit (comprising (916) (see figure 9) connected to said propagation path estimation unit for selecting one of a plurality of modulation schemes.

-Regarding to claim 17, Walton et al discloses that said receiving unit includes means (1012) for extracting (CSI) indicating the information on the modulation scheme of the received data from said received data (see figure 10A, col. 42, line 11-17, col. 45, line 14 to col. 46, line 50).

-Regarding to claim 18, Walton et al discloses a fixed wireless access (FWA) system (see figure 8A) comprising: a radio base station (104); and a plurality of subscriber stations

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(106a,...,106n) adapted to communicate with said base station by radio; wherein said radio base station includes said radio transmitter/receiver.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al.

-Regarding to claim 9, Walton et al does not disclose whether said QoS control unit has a QoS control mode table for defining the relation between the range of the transmission rate for said radio section and the QoS control mode applicable to the transmission data, and wherein said QoS control mode applicable to the transmission data is determined in accordance with the information transmission rate for the radio section with reference to said QoS control mode table.

However, he teaches that said QoS control mode applicable to the transmission data is determined, by the QoS control unit, in accordance with the information transmission rate for the radio section (see col. 44, lines 22-25, col. 49, lines 45-50).

Using an assigning table to assign operation modes of a system by being based upon certain conditions are well-known in the art. For instance, see Walton et al, TABLES 1-3.

It would have been obvious for one skilled in the art, within his skills, when carrying out Walton et al invention, to implement said QoS control unit to have a QoS control mode table for defining the relation between the range of the transmission rate for said radio section and the

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QoS control mode applicable to the transmission data, and wherein said QoS control mode applicable to the transmission data is determined in accordance with the information transmission rate for the radio section with reference to said QoS control mode table, so that with such the implementation, said QoS control unit would quickly determine the QoS control mode applicable to the transmission data in accordance with the information transmission rate for the radio section, by referring on information provided in the QoS control mode table.

-Regarding to claim 16, Walton et al does not disclose that said plurality of the modulation schemes include 64 QAM, 16 QAM, QPSK and BPSK. However, Walton et al teaches that said plurality of the modulation schemes include QPSK, M-PSK, M-QAM (see col. 44, lines 12-18). Since 64 QAM, 16 QAM are selective versions of M-QAM, and QPSK and BPSK are selective versions of M-PSK, therefore, for an application, it would have been obvious for one skilled in the art, when carrying out Walton et al invention, to implement Walton et al in such a way that said plurality of the modulation schemes would be configurable to include 64 QAM, 16 QAM, QPSK and BPSK, as being allowed by Walton et al.

Allowable Subject Matter

6. Claims 2-6, 10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. References 6662024 and 6748220 are additionally cited because they are pertinent to the claimed method and associated system.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Phu

Phuong Phu
11/15/06

**PHUONG PHU
PRIMARY EXAMINER**

Phuong Phu
Primary Examiner
Art Unit 2611